



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/606,844	06/27/2003	Hiroyuki Iwahara	030776	4813
38834	7590	11/14/2005	EXAMINER	
WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP 1250 CONNECTICUT AVENUE, NW SUITE 700 WASHINGTON, DC 20036			RENNER, CRAIG A	
			ART UNIT	PAPER NUMBER
			2652	

DATE MAILED: 11/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/606,844

Applicant(s)

IWAHARA ET AL.

Examiner

Craig A. Renner

Art Unit

2652

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 September 2005 & 31 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) 11 and 12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of "Species I," upon which "claims 1-10" are said to "read", in the reply filed on 06 September 2005 is acknowledged. Accordingly, claims 11-12 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to one or more non-elected inventions/species, there being no allowable generic or linking claim.

### ***Drawings***

2. The drawings were received on 31 March 2005. These drawings are accepted.

### ***Specification***

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The following is suggested:

--DISC DRIVE ACTUATOR ASSEMBLY WITH FLEXIBLE PRINTED  
CIRCUIT BOARD DAMPING CONFIGURATION--.

4. The disclosure is objected to because of the following informalities:

In lines 1-2 of the ABSTRACT, lines 18-19 on page 3, lines 8-9 and 14-15 on page 4, lines 4-5 and 18-19 on page 5, each instance of "a head that records information from and/or reproduces information onto a disc" should be changed to --a

head that records information onto and/or reproduces information from a disc-- in order to be consistent with the remainder of the disclosure. See lines 2-7 on page 16, for instance. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. In line 2 in each of claims 1, 8, and 9, lines 2-3 of claim 11, and lines 1-2 of claim 12, each instance of "a head that records information from and/or reproduces information onto a disc" is indefinite as it is misdescriptive of the disclosure, which teaches/shows that the head records information onto and/or reproduces information from the disc (emphasis added). See lines 2-7 on page 16, for instance.

b. Claims 2-7 and 10 inherit the indefiniteness associated with their respective base claims and stand rejected as well.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-3 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Myokan (JP 10-134529).

With respect to claims 1-3, Myokan teaches a disc unit comprising a head (28) that records information onto and/or reproduces information from a disc (21); a suspension (includes 25 and 27, for instance) that includes a top surface and a side surface, and supports the head on the top surface (as shown in FIG. 4, for instance); a flexible printed circuit board (60/66), which is connected to the head (paragraph [0041], for instance) from the suspension, attached to the side surface of the suspension through an air gap (as shown in FIG. 4, for instance), the flexible printed circuit board transmitting a signal indicative of the information to and from the head (paragraph [0045], for instance); and a damper (67) that damps oscillation of the flexible printed circuit board [as per claim 1]; wherein the damper comprises a first layer (67a); and a second layer (67b), formed on the flexible printed circuit board and connected to the flexible printed circuit board, which elastically transmits the oscillation from the flexible printed circuit board to the first layer [as per claim 2]; and wherein the second layer is made of a viscoelastic material (paragraph [0043], for instance) [as per claim 3].

With respect to claim 8, Myokan teaches a disc unit comprising a head (28) that records information onto and/or reproduces information from a disc (21); and a flexible printed circuit board (60), which is connected to the head (paragraph [0041], for

Art Unit: 2652

instance) from a suspension (includes 25 and 27, for instance) and is attached to the side surface of the suspension through an air gap (as shown in FIG. 4, for instance), that transmits a signal indicative of the information to and from the head (paragraph [0045], for instance), the flexible printed circuit board having at least two layers (includes 66 and 67, for instance), one layer (67) of which damps vibration generated in the other layer (66).

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 4-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Myokan (JP 10-134529).

Myokan teaches the disc unit as detailed in paragraph 8, *supra*, further comprising a spindle motor (22) that rotates the disc at a disc rotation speed, wherein the disc has a storage capacity, and wherein the first layer is made of a first constraint layer material. Myokan, however, remains silent as to the oscillation transmitting second layer being a "pressure sensitive adhesive double coated tape" as per claim 4, the first constraint layer material being "metal" as per claim 5 or "polyimide" as per claim

6, and the disc rotation speed being "10,000 rpm or higher" and the disc storage capacity being "60 GB or larger" as per claim 7.

Official notice is taken of the fact that pressure sensitive adhesive double coated tape is a notoriously old and well known oscillation transmitting material in the art. Official notice is also taken of the fact that any one of metal and polyimide is a notoriously old and well known constraint layer material in the art. Official notice is further taken of the fact that it is notoriously old and well known in the art to increase disc rotation speed in the same field of endeavor for the purpose of enabling faster access rates. Official notice is lastly taken of the fact that it is notoriously old and well known in the art to increase disc storage capacity in the same field of endeavor for the purpose of enabling more storage capability. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have had the oscillation transmitting second layer of Myokan be a pressure sensitive adhesive double coated tape, the first constraint layer material of Myokan be metal or polyimide, the disc rotation speed of Myokan be 10,000 rpm or higher, and the disc storage capacity of Myokan be 60 GB or larger. The rationale is as follows:

One of ordinary skill in the art would have been motivated to have had the oscillation transmitting second layer of Myokan be a pressure sensitive adhesive double coated tape since such is a notoriously old and well known oscillation transmitting material in the art, and since selecting a known material on the basis of its suitability for the intended use is within the level of ordinary skill in the art, *In re Leshin*, 125 USPQ 416 (CCPA 1960).

One of ordinary skill in the art would have been motivated to have had the first constraint layer material of Myokan be metal or polyimide since any one of metal and polyimide is a notoriously old and well known constraint layer material in the art, and since selecting a known material on the basis of its suitability for the intended use is within the level of ordinary skill in the art. See *In re Leshin*, supra.

One of ordinary skill in the art would have been motivated to have had the disc rotation speed of Myokan be 10,000 rpm or higher since such enables faster access rates.

One of ordinary skill in the art would have been motivated to have had the disc storage capacity of Myokan be 60 GB or larger since such enables more storage capability.

11. Claims 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Budde et al. (US 6,728,073).

Budde teaches a disc unit (10) comprising a head (12) that records information onto and/or reproduces information from a disc (16); a suspension (26/42) that supports the head and includes a circuit (includes adjacent 40, for instance) that is electrically connected to the head, a trunk flexible printed circuit board (46), which is connected to the circuit of the suspension and is attached to the side surface of the suspension through an air gap (adjacent 64, as shown in FIG. 2, for instance), the trunk flexible printed circuit board transmitting a signal indicative of the information to and from the head; a main flexible printed circuit board (shown in FIG. 1, for instance), connected to



Art Unit: 2652

the trunk flexible printed circuit board; and a damper (66) that damps oscillation of the trunk flexible printed circuit board [as per claim 9]; wherein the trunk flexible printed circuit board is connected to the circuit at a first junction, and the main flexible printed circuit board at a second junction, and wherein the trunk flexible printed circuit board is fixed to the suspension between the first and second junctions (as shown in FIG. 2, for instance) [as per claim 10]. Budde, however, remains silent as to the main flexible printed circuit board further comprising a "preamp IC".

Official notice is taken of the fact that it is notoriously old and well known in the art to have a main flexible printed circuit board further comprise a preamp IC in the same field of endeavor for the purpose of enabling signal amplification. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have had the main flexible printed circuit board of Budde further comprise a preamp IC. The rationale is as follows:

One of ordinary skill in the art would have been motivated to have had the main flexible printed circuit board of Budde further comprise a preamp IC since such enables signal amplification.

#### ***Pertinent Prior Art***

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. This includes Ohwe (US 2005/0135016), which teaches a disk drive flex circuit damping configuration.

***Response to Arguments***

13. Applicant's arguments filed 31 March 2005 have been fully considered but they are not persuasive.

The applicant argues that the "disclosure does not teach/show that the head records information onto and/or reproduces information from the disk." This argument, however, is not found to be persuasive as the disclosure does teach/show that the head records information onto and/or reproduces information from the disk. See lines 2-7 on page 16, for instance.

The applicant further contends that "Myokan does not disclose 'a flexible printed circuit board, which is connected to said head from said suspension, attached to the side surface of said suspension through an air gap'." This argument, however, is not found to be persuasive as Myokan does disclose a flexible printed circuit board (60/66), which is connected to a head (28, see paragraph [0041], for instance) from a suspension (includes 25 and 27, for instance), attached to a side surface of the suspension through an air gap (as shown in FIG. 4, for instance).

The applicant last asserts that Budde does not disclose "a flexible printed circuit board, which is connected to said head from said suspension, attached to the side surface of said suspension through an air gap." This argument, however, is not found to be persuasive as Budde does disclose a flexible printed circuit board (46), which is connected to a head (12) from a suspension (26/42), attached to a side surface of the suspension through an air gap (adjacent 64, as shown in FIG. 2, for instance).

***Conclusion***

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

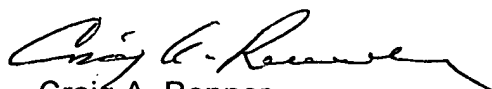
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Craig A. Renner whose telephone number is (571) 272-7580. The examiner can normally be reached on Tuesday-Friday 9:00 AM - 7:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, A. L. Wellington can be reached on (571) 272-4483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2652

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Craig A. Renner  
Primary Examiner  
Art Unit 2652

CAR